REINFORCED SMALL INTESTINAL SUBMUCOSA

AS. 05/22/06.

This application is a continuation of U.S. Patent Application No. 09/918,116, filed July 30, 2001, now U.S. Patent No. 6,638,313 which claims priority under 35 U.S.C. 119(e) to U.S. Provisional Application Serial No. 60/223,399, filed August 4, 2000, which is expressly incorporated by reference herein.

Field of the Invention

The present invention relates to bioprosthetics and particularly to the use of bioprosthetics for the repair and replacement of connective tissue. More particularly, the present invention relates to the use of a composite bioprosthetic device made up of a synthetic portion and heterologous animal tissue.

Background and Summary of the Invention

Currently there are multiple patents and publications that describe in detail the characteristics and properties of small intestine submucosa (SIS). See, for example, U.S. Patent Nos. 5,352,463, 4,902,508, 4,956,178, 5,281,422, 5,372,821, 5,445,833, 5,516,533, 5,573,784, 5,641,518, 5,645,860, 5,668,288, 5,695,998, 5,711,969, 5,730,933, 5,733,868, 5,753,267, 5,755,791, 5,762,966, 5,788,625, 5,866,414, 5,885,619, 5,922,028, 6,056,777, and WO 97/37613, incorporated herein by reference. SIS, in various forms, is commercially available from Cook Biotech Incorporated (Bloomington, IN). Further, U.S. Patent No. 4,400,833 to Kurland and PCT publication having International Publication Number WO 00/16822 provide information related to bioprosthetics and are also incorporated herein by reference.

There are currently many ways in which various types of soft tissues such as ligaments or tendons, for example, are reinforced and/or reconstructed. Suturing the torn or ruptured ends of the tissue is one method of attempting to restore function to the injured tissue. Sutures may also be reinforced through the use of synthetic non-bioabsorbable or bioabsorbable materials. Autografting, where tissue is taken from another site on the patient's body, is another means of soft tissue reconstruction. Yet another means of repair or reconstruction can be achieved through allografting, where tissue from a donor of the same species is used. Still another